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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KIELIN, ERIK J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/141,287

Applicant(s)

WU ET AL.

Examiner

Erik Kielin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 17-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/3/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 27 September 2004 has been entered.

Claim Status

2. 37 C.F.R. § 1.198 states,

“Reopening after decision.”

“Cases which have been decided by the Board of Patent Appeals and Interferences will not be reopened or reconsidered by the primary examiner except under the provisions of § 1.114 or § 1.196 without the written authority of the Commissioner, and **then only for the consideration of matters not already adjudicated**, sufficient cause being shown.” (Emphasis added.)

Inasmuch as only claims 16 and 20 have been amended, claim 20 being amended only for a typographical error, matters related to all claims (1-13 and 17-31) except claim 16 have already been adjudicated. Accordingly, the only matter to be considered are those related to amended claim 16. Because claim 16, as amended depends from claim 1, claim 16 has all of the features of claim 1.

Claim Objections

3. Claim 16 is objected to because of the following informalities:

In line 2, replace "form" with --from-- for correct spelling.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(f) he did not himself invent the subject matter sought to be patented.

5. Claims 1 and 16 are rejected under 35 U.S.C. 102(e) and 102(f) as being anticipated by US 5,736,425 (**Smith et al.**) in view of Hawley's Condensed Chemical Dictionary, 12th ed., Richard J. Lewis, Sr., Van Nostrand Reinhold, 1993, p. 393 and The Handbook of Chemistry and Physics, the 63rd ed., for example, entry 6125 on page C-268.

Regarding the features from claim 1 which have been affirmed by the Board of Patent Appeals and Interferences in Papers 20 February 2004 and 30 July 2004, **Smith** discloses a coated substrate **10** or a semiconductor device (Table 3) having a semiconductor substrate **10** formed by a process which comprises:

(a) forming a substantially uniform alkoxysilane gel composition **14** on a surface of a substrate, which alkoxysilane gel composition comprises a combination of at least one

alkoxysilane, an organic solvent composition, water, and an optional base catalyst, wherein the organic solvent composition comprises a relatively high volatility solvent (e.g. ethanol) having a boiling point of about 120 °C or less and a relatively low volatility solvent (e.g. ethylene glycol) having a boiling point of about 175 °C or more (Table 3; Fig. 8A);

(b) heating the substrate **10** for a sufficient time and at a sufficient temperature in an organic solvent vapor atmosphere to thereby condense the gel composition (col. 11, lines 19-41); and then

(c) curing the gel composition to form a nanoporous dielectric coating **18** on the substrate **10** (Fig. 8B; col. 11, lines 19-41). (See also col. 10, line 26 to col. 16, line 43.)

Regarding claim 16, the relatively high volatility solvent comprises one or more components selected from the group consisting of methanol, ethanol, n-propanol, isopropanol, n-butanol and mixtures thereof and wherein the alkoxysilane gel composition further comprises an alcohol or a polyol (Tables 2 and 3). Note further in this regard, that the hydrolysis of the alkoxysilane necessarily liberates additional alcohol into the gel composition depending upon the identity of the alkoxysilane. Accordingly, Smith discloses this limitation in numerous manners.

Smith does not teach that the low volatility solvent is a monomethyl ether. **Smith** does however state that the only requirements for a low volatility solvent are its having a boiling point of 175 °C to 250 °C and being “miscible with both water and ethanol” (col. 5, lines 5-8). Applicant's specification, too, indicates that such low volatility solvent have a boiling point higher than 175 °C and more preferably higher than 200 °C (page 6, first paragraph). **Smith** continues “...three suitable low volatility solvent **candidates** are glycols...” (emphasis added) (column 5, lines 8-12). Clearly, this list is not limitative of appropriate solvents and even alerts

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those of ordinary skill that other solvents are appropriate. Therefore, both the method **and the suggestion** to use solvents dictated by the required properties is presented in the **Smith** patent alone. These same properties are required of the organic solvent composition in the instant application as both water and ethanol were present in the alkoxysilane composition (See page 6, lines 1-5; page 7, lines 1-2 and 5-7.)

Hawley's indicates, *inter alia*, that the boiling point of diethylene glycol monomethyl ether (the first in the list of solvents in Appellant's claim 1) is 194 °C and that it is soluble in water. Those of ordinary skill would also know that it would be soluble in ethanol (the universal solvent). The solubility in ethanol (commonly, alcohol), although not in **Hawley's** is in the standard text, The Handbook of Chemistry and Physics, the 63rd ed., for example, entry 6125 on page C-268, as are selected properties of most known organic compounds including monomethyl ethers.

It would have been obvious for one of ordinary skill in the art, at the time of the invention to use monomethyl ether solvents in the invention of **Smith**, because **Smith** suggests using other solvents having properties which are met by the monomethyl ether solvents in **Hawley's**.

The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) (Claims to a printing ink comprising a **solvent** having the vapor pressure characteristics of butyl carbitol so that the ink would not dry at room temperature but would dry quickly upon heating were held invalid over a reference teaching a printing ink made with a different **solvent** that was nonvolatile at room temperature but highly volatile when heated in view of an article which taught the desired boiling point and vapor pressure

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characteristics of a solvent for printing inks and a catalog teaching the boiling point and vapor pressure characteristics of butyl carbitol. "Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle." 65 USPQ at 301.). (See MPEP 2144.07.)

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claim 16 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-53 of U.S. Patent No. US 5,736,425 (Smith et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application claims the same process as is already claimed in the '425 patent.

8. Claim 16 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-36 of U.S. Patent No. US 5,807,607 (Smith et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application claims the process as is already claimed in the '607 patent.

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Response to Arguments

9. Applicant's arguments filed 27 September 2004 have been fully considered but they are not persuasive.

Applicant's arguments drawn to the patentability of the claims are moot as the BPAI already affirmed the Office rejections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 571-272-1693. The examiner can normally be reached on 9:00 - 19:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erik Kielin
Primary Examiner
November 19, 2004